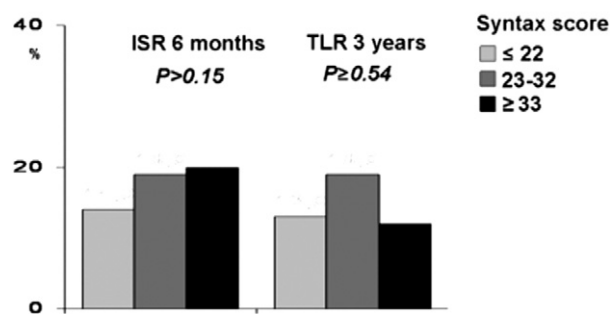


## Syntax score and interventional outcome



**Conclusions:** Treatment of uLMCA bifurcation lesions with DES is safe and effective. The overall cardiovascular disease burden represented by the syntax score has no prognostic impact on the local angiographic restenosis rate or TVR of the left main bifurcation itself after DES implantation.

### TCT-694

#### Clinical And Angiographical Outcomes Of Percutaneous Coronary Intervention With Triple Kissing Balloon Technique After Drug-Eluting Stent Implantation For Left Main Trifurcation Disease

Shunsuke Kubo<sup>1</sup>, Kazushige Kadota<sup>1</sup>, Seiji Habara<sup>1</sup>, Takeshi Tada<sup>1</sup>, Hiroyuki Tanaka<sup>1</sup>, Yasushi Fuku<sup>1</sup>, Naoki Oka<sup>1</sup>, Harumi Katoh<sup>1</sup>, Tsuyoshi Goto<sup>1</sup>, Kazuaki Mitsudo<sup>1</sup>

<sup>1</sup>Kurashiki Central Hospital, Kurashiki, Japan

**Background:** Percutaneous coronary intervention (PCI) for left main (LM) trifurcation disease is a challenging field for interventional cardiologist. Triple kissing balloon technique (triple-KBT) is often necessary for PCI for LM trifurcation. However, there is no data available on clinical and angiographical outcomes of triple-KBT after drug-eluting stent (DES) implantation.

**Methods:** We identified 58 patients (58 LM trifurcation) who had undergone PCI with triple-KBT after DES implantation, and investigated angiographical and clinical outcomes. Clinical outcomes were evaluated by all-cause death and target lesion revascularization (TLR). Follow-up angiography was performed at 8 months after index procedure.

**Results:** The angiographical success rate was 100%, and in-hospital death and coronary artery bypass grafting were nothing. Procedural and angiographical follow-up data are shown in the table. Clinical follow-up were performed in all patients, and mean follow-up period was 690 ± 533 days. The incidence of all-cause death was 3.4%, and that of TLR was 12.1%. The incidence of TLR was higher in true trifurcation lesions than non-true trifurcation lesions (22.2% v.s. 3.2%, p=0.042). The incidence of TLR in the single stent strategy was 5.3%.

**Conclusions:** DES implantaion with triple-KBT for LM trifurcation disease is the feasible technique, associated with favorable angiographical and clinical results. Especially, the single stent strategy with triple-KBT is acceptable. Angiographical characteristics at procedure and follow-up angiography

Lesions (n=58)	MB	SB 1	SB 2
Reference diameter (mm)	3.34 ± 0.49	2.47 ± 0.35	2.76 ± 0.46
Lesion length of MB (mm)	21.3 ± 12.2		
Pre procedural MLD (mm)	0.87 ± 0.58	1.24 ± 0.65	0.46 ± 0.72
Pre procedural % DS (%)	72.9 ± 17.1	50.0 ± 24.5	46.5 ± 25.2
Balloon size (mm)	3.06 ± 0.42	2.43 ± 0.38	2.68 ± 0.44
Post procedural MLD (mm)	2.91 ± 0.52	1.82 ± 0.44	2.10 ± 0.58
Post procedural % DS (%)	16.4 ± 10.2	29.4 ± 15.8	26.8 ± 14.3
Angiographical follow-up rate	87.9% (51/58)		
Late loss (mm)	0.58 ± 0.77	0.45 ± 0.43	0.44 ± 0.73
Binary restenosis (% , n)	9.8% (5)	33.3% (17)	21.6% (11)

The main branch (MB) was defined as the bigger branch with the largest perfusion. The side branch 1 (SB1) was defined as the one with the narrowest angle from the distal main branch. The other one was defined as side branch 2 (SB2).

%DS = percent diameter stenosis, MLD = minimum luminal diameter

### TCT-695

#### Single Versus Double Stenting for the Left Main Coronary Bifurcation: A Systematic Review and Meta-Analysis

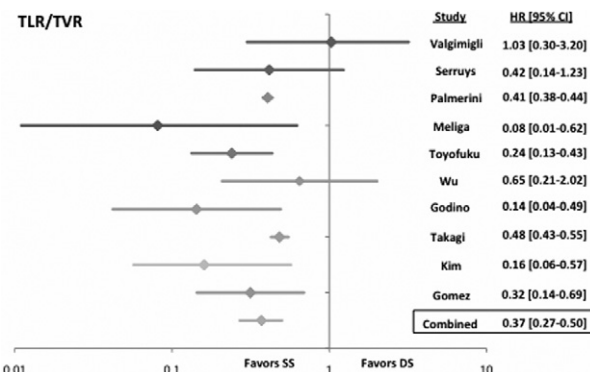
Wassef Karrowni<sup>1</sup>, Nader Makki<sup>1</sup>, Amandeep Dhaliwal<sup>1</sup>, Saadeddine Dughman<sup>1</sup>, Amy Blevins<sup>1</sup>, Peter Cram<sup>1</sup>, Phillip Horwitz<sup>1</sup>

<sup>1</sup>University of Iowa Carver College of Medicine, Iowa city, IA

**Background:** The outcomes of left main coronary artery (LMCA) stenting have improved with the routine use of drug-eluting stent (DES). However, stenting for LMCA bifurcation lesions continues to be technically demanding and an independent predictor of poor outcomes. Several studies have addressed different stenting approaches to such lesions but the optimal strategy has not yet been determined.

**Methods:** We conducted a systematic review and meta-analysis to investigate the outcomes of a single-stent (SS) versus a double-stent (DS) strategy to treat distal unprotected LMCA lesions in the DES era. SS treatment was defined as stenting of the main branch alone and DS treatment as stenting of both the main and side branches. Our co-primary endpoints were major adverse cardiac events (MACE), and target lesion/vessel revascularization (TLR/TVR). We included studies that enrolled ≥ 100 patients and had > 6 months follow-up.

**Results:** We identified 10 studies involving 2526 patients. Mean duration of follow-up was 35.5 months (range 20-48). Studies were noted to be heterogeneous (p-value < 0.001), thus, we adopted the random effect model when computing the combined hazard ratio (HR). There was decreased risk of MACE with SS strategy (19.9%; 224/1125) versus DS strategy (33.6%; 284/845) [HR (95% CI)- 0.52 (0.36-0.76)]. There was also decreased TLR/TVR with SS strategy (14.2%; 220/1550) versus DS strategy (28.6%; 279/976) [HR (95% CI)- 0.37 (0.27-0.50)] (figure).



**Conclusions:** As compared to double-stent strategy of percutaneous LMCA bifurcation intervention, a single-stent approach is associated with lower MACE and TLR/TVR.

### TCT-696

#### Impact of Bifurcation Angle on Major Cardiac Events After Cross Over Single Stent Strategy In Unprotected Left Main Bifurcation Lesion: 3-Dimensional Quantitative Coronary Angiographic Analysis

Kisaki Amemiya<sup>1</sup>, Takenori Domei<sup>2</sup>,

<sup>1</sup>Kokura Memorial Hospital, Kitakyushu, Fukuoka, <sup>2</sup>Kokura memorial hospital, Kitakyushu, Japan

**Background:** The impact of bifurcation angle (BA) between left main (LM) and left anterior descending artery (LAD) on clinical outcomes after single stenting (LM to LAD) have never been documented. Therefore, we investigated the impact of this angle on clinical outcomes after cross over single stent strategy in this study.

**Methods:** A total of 170 patients who underwent PCI in unprotected LM bifurcation with successful single cross over stenting from the LM into the LAD were enrolled. The proximal BA (BA between LM and LAD: shown in Fig.A) were computed in end-diastole before PCI with 3D QCA software. The patients were classified into three groups according to the tertile of the proximal BA (low BA group; n=57, middle BA group; n=57, and high BA group; n=56, shown in Fig.B). The cumulative incidence of major adverse cardiac event (MACE: cardiac death, myocardial infarction, any revascularization including target lesion revascularization) rates throughout the 12-month were compared between three groups. For analyzing for predictors of MACE, multivariate analysis was also performed.

**Results:** Baseline patient characteristics were not significant difference between three groups. Compared to high angle group, the low angle group had significant high incidence of MACE (log rank; p=0.041)(Fig.B). In multivariate analysis, Pre-PCI proximal BA were one of the significant independent predictors of MACE (Hazard ratio: 0.98; 95% confidence interval: 0.97 to 0.99, P=0.0018).